Wheat Varieties Work Report (Task 2)

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Submitted To: Dr. Raihan Ul Islam

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ResNet50:

Accuracy: 0.8750

Precision: 0.9028

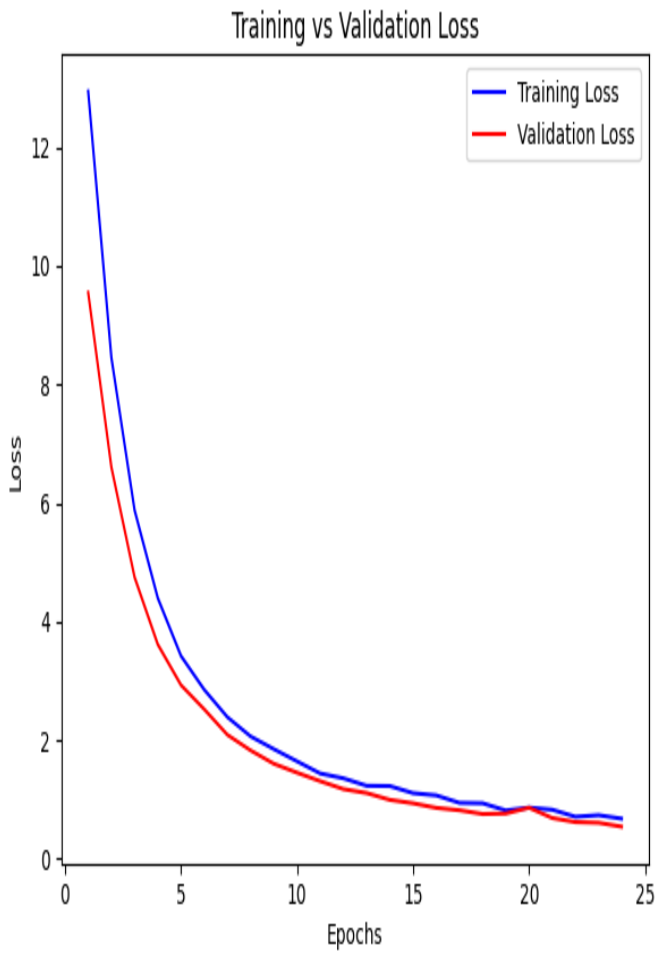
Recall: 0.8750

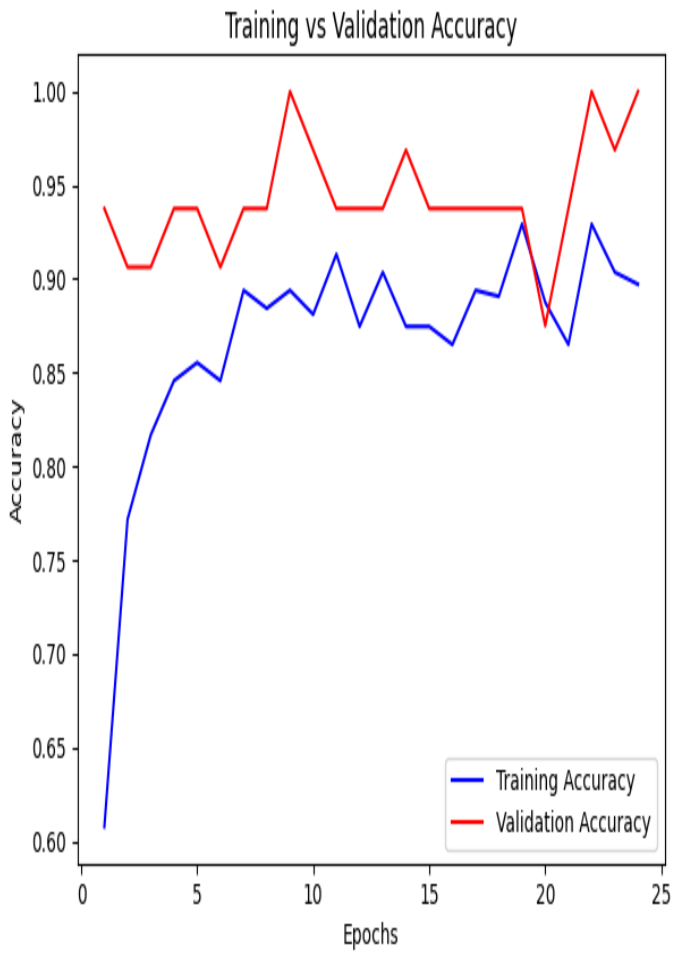
F1-Score: 0.8650

Classification Report:

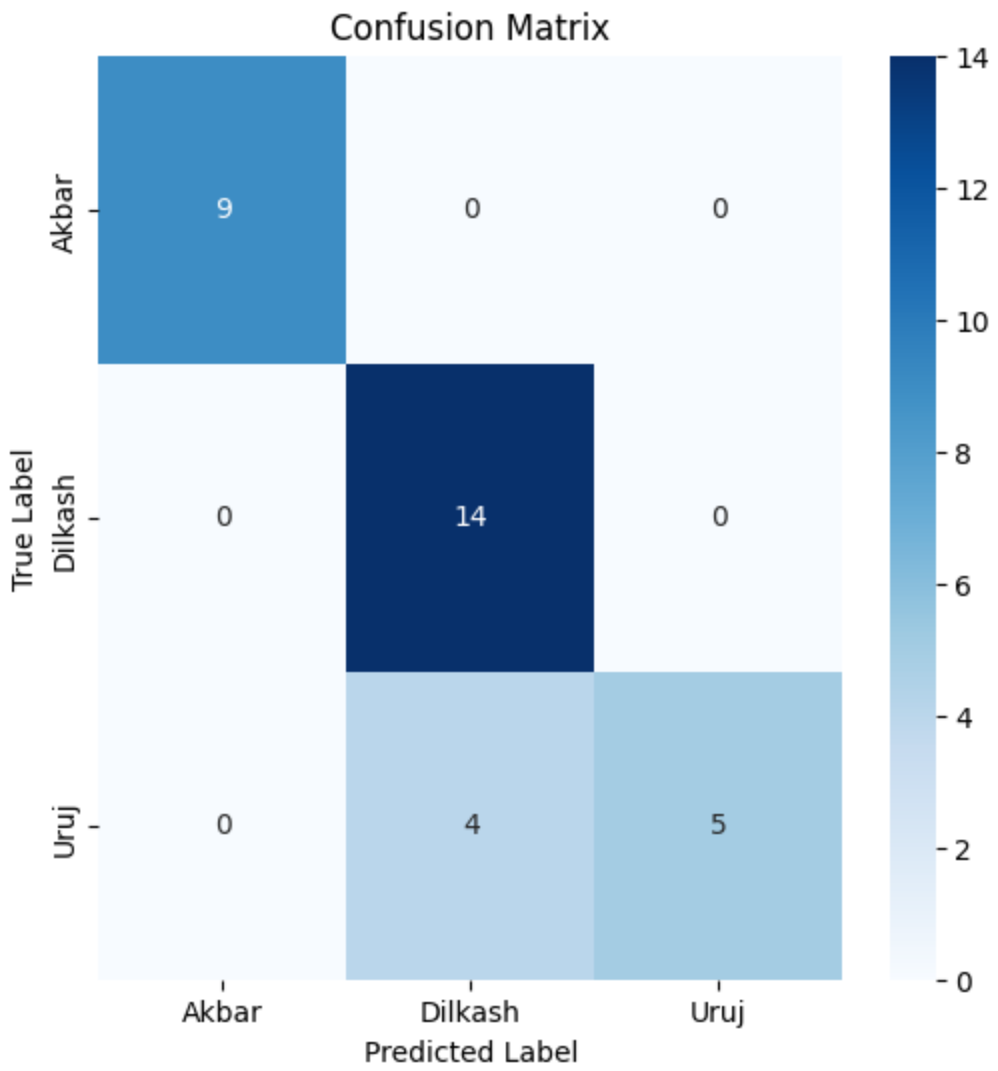
	precision	recall	f1-score	support
Akbar	1.00	1.00	1.00	9
Dilkash	0.78	1.00	0.88	14
urooj	1.00	0.56	0.71	9

Trainning and Validation Accuracy:





Confusion Matrix:



Effecient Net:

Accuracy: 0.8438

Precision: 0.8665

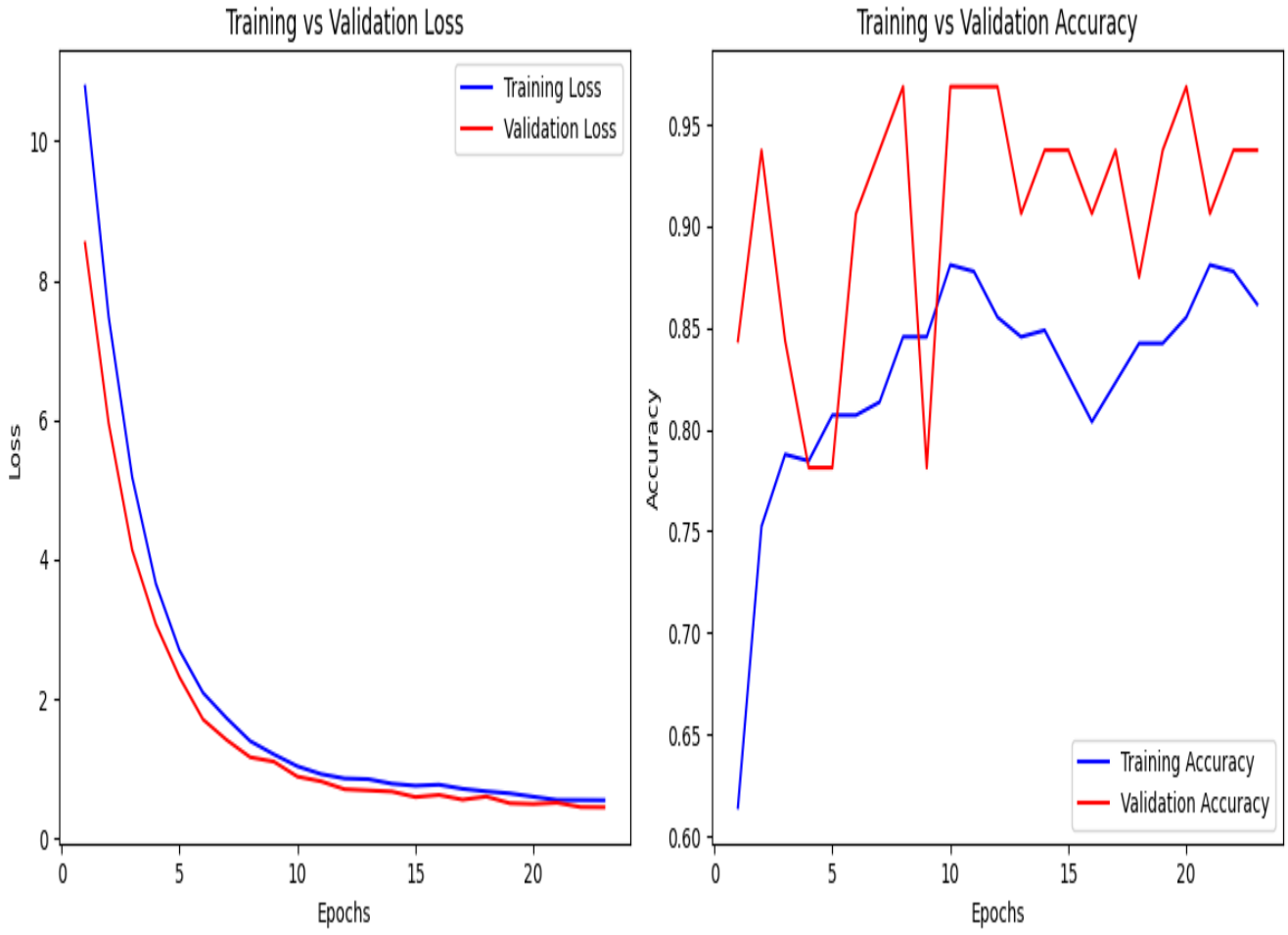
Recall: 0.8438

F1-Score: 0.8455

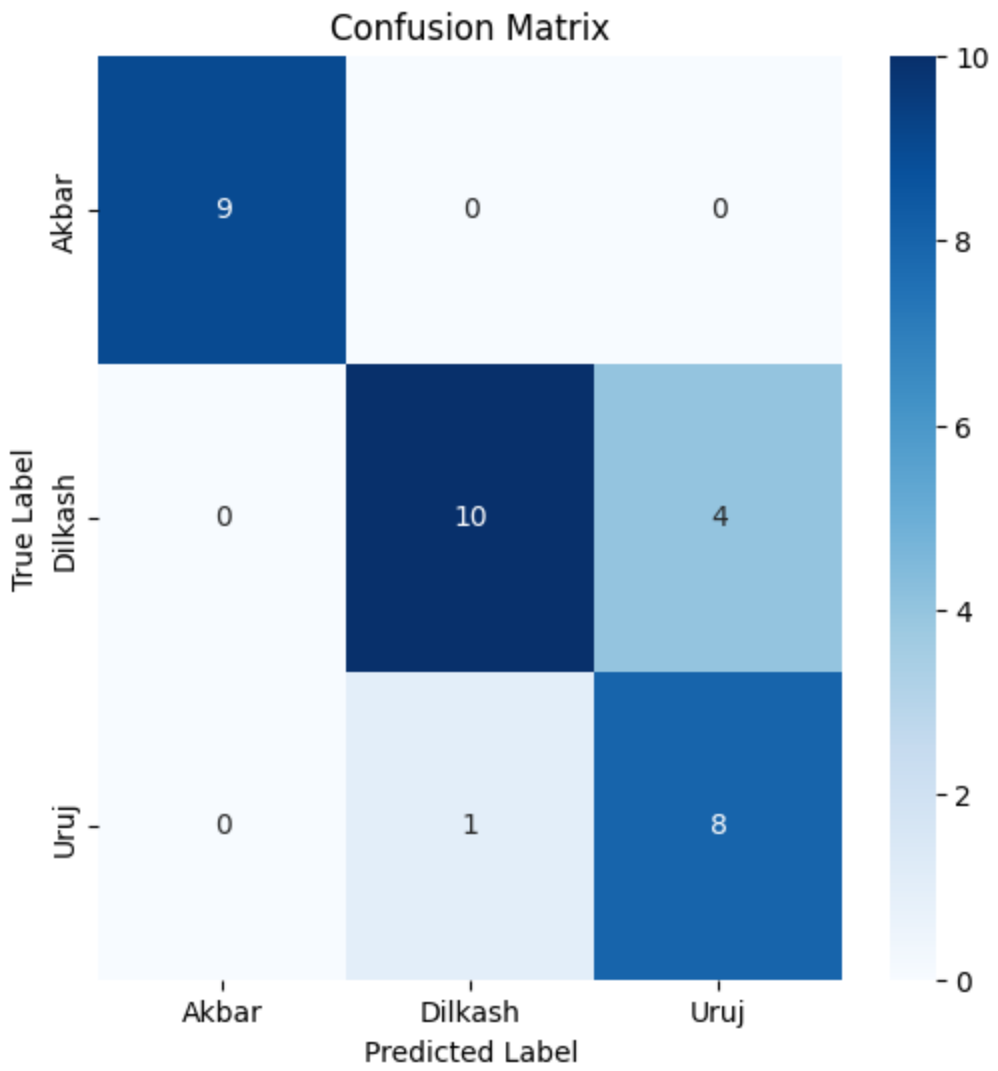
Classification Report:

	precision	recall	f1-score	support
Akbar	1.00	1.00	1.00	9
Dilkash	0.91	0.71	0.80	14
Uruj	0.67	0.89	0.76	9

Trainning and Validation Accuracy:



Confusion Matrix:



MobileNet:

Accuracy: 0.8438

Precision: 0.8849

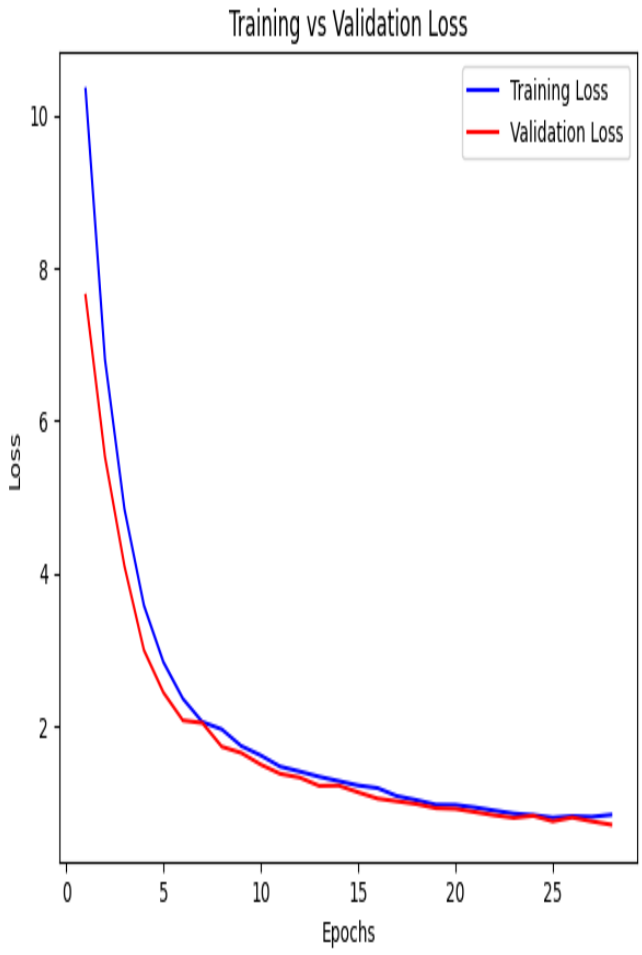
Recall: 0.8438

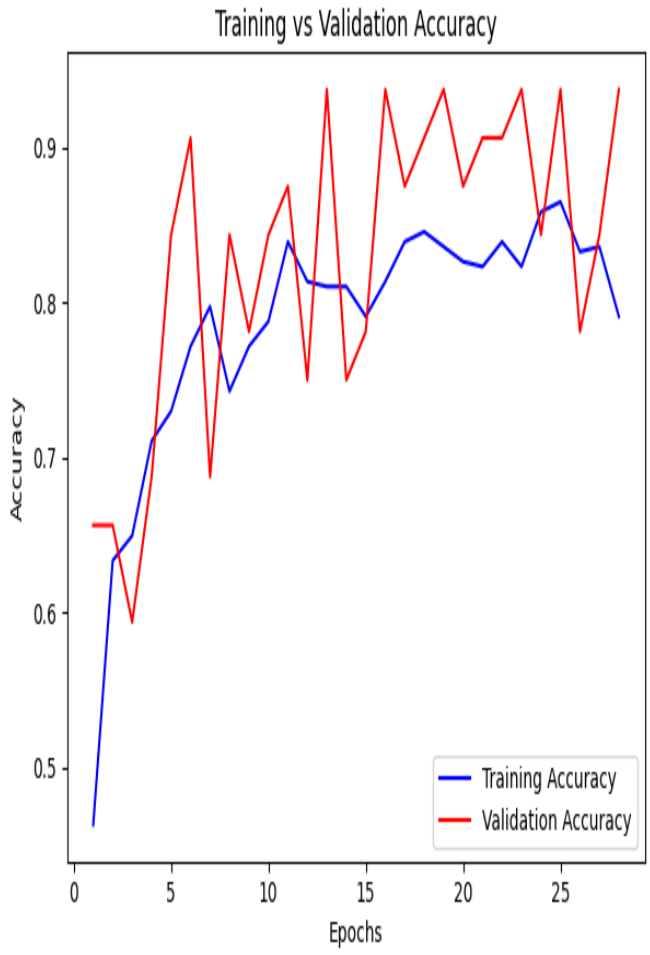
F1-Score: 0.8255

Classification Report:

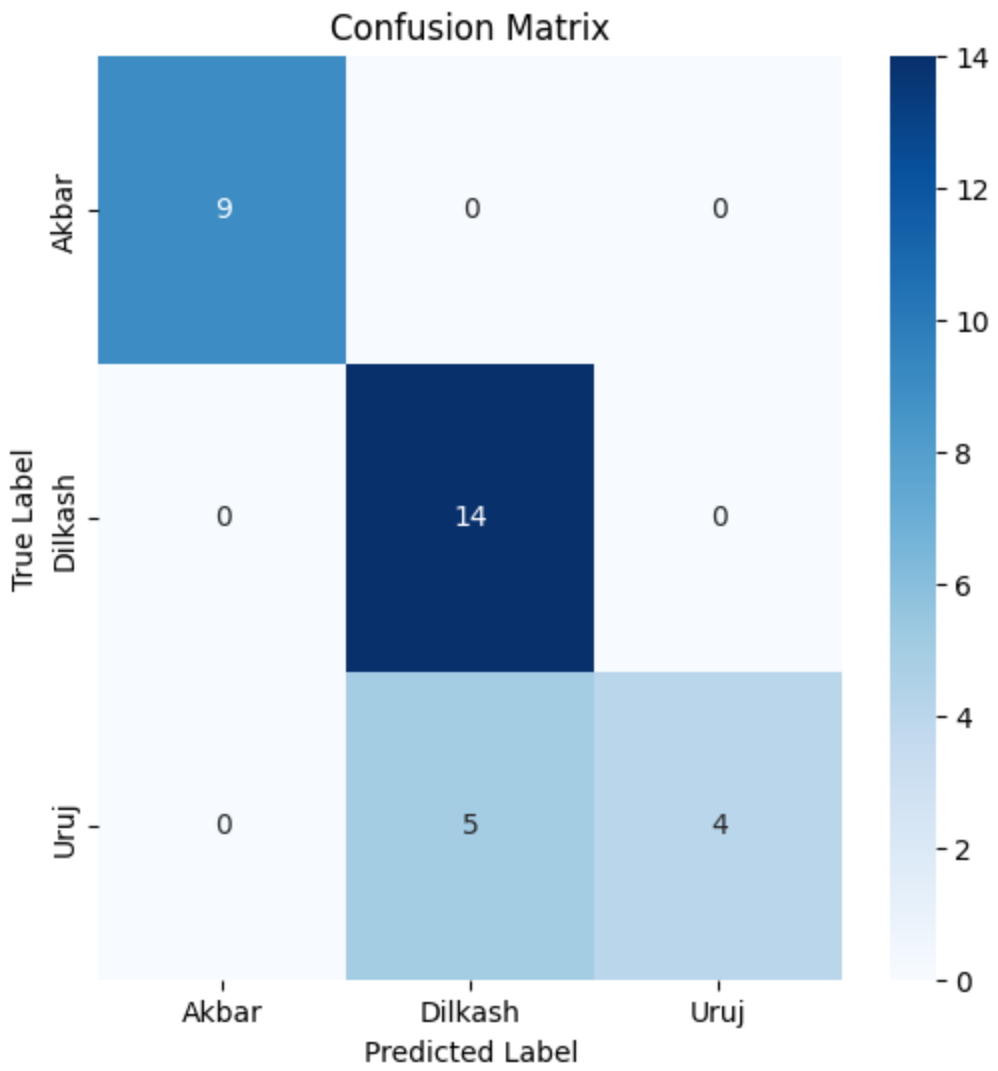
	precision	recall	f1-score	support
Akbar	1.00	1.00	1.00	9
Dilkash	0.74	1.00	0.85	14
Uruj	1.00	0.44	0.62	9

Trainning and Validation Accuracy:





Confusion Matrix:



GoogleNet:

Accuracy: 0.7895

Precision: 0.7982

Recall: 0.7895

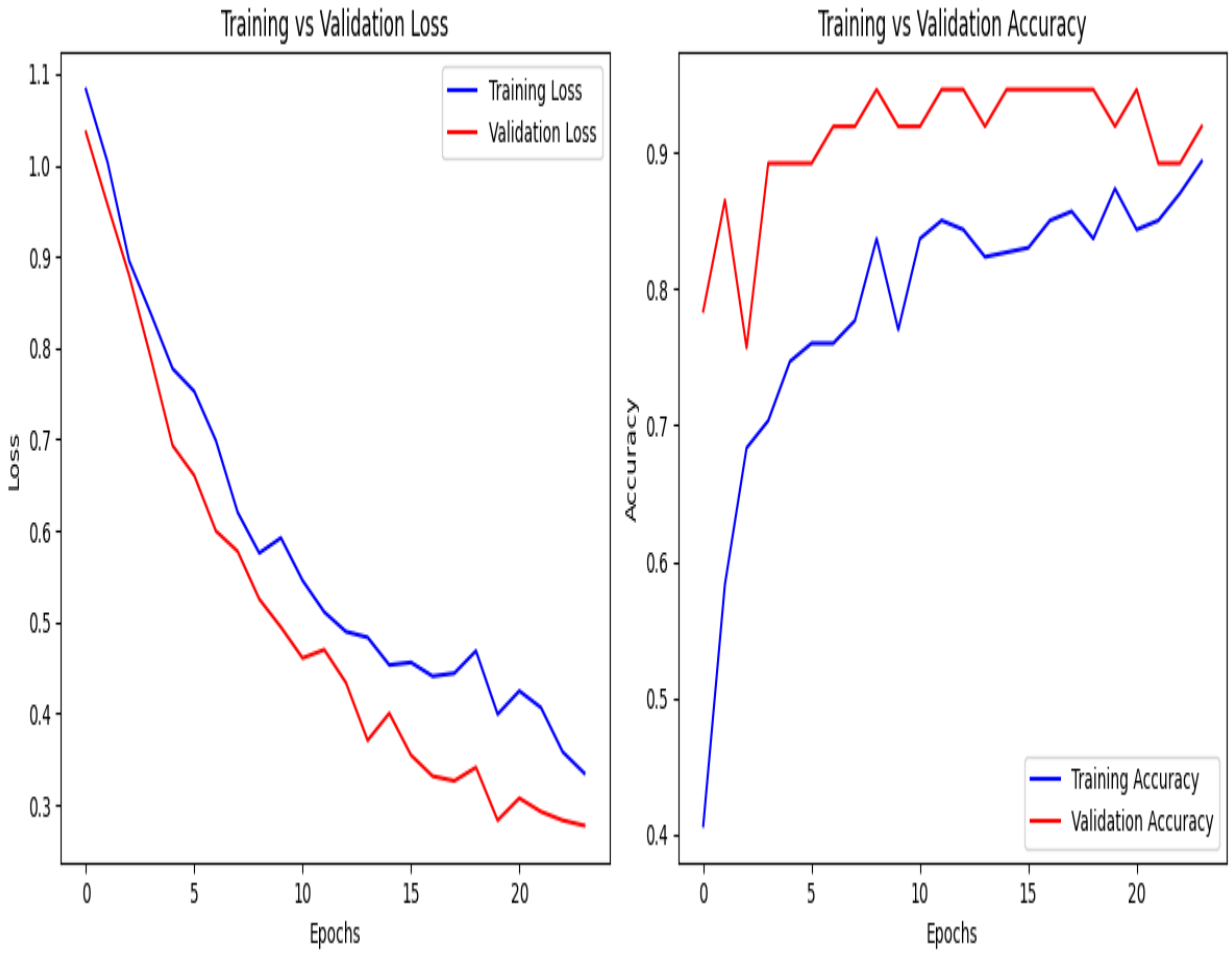
F1-Score: 0.7930

Classification Report:

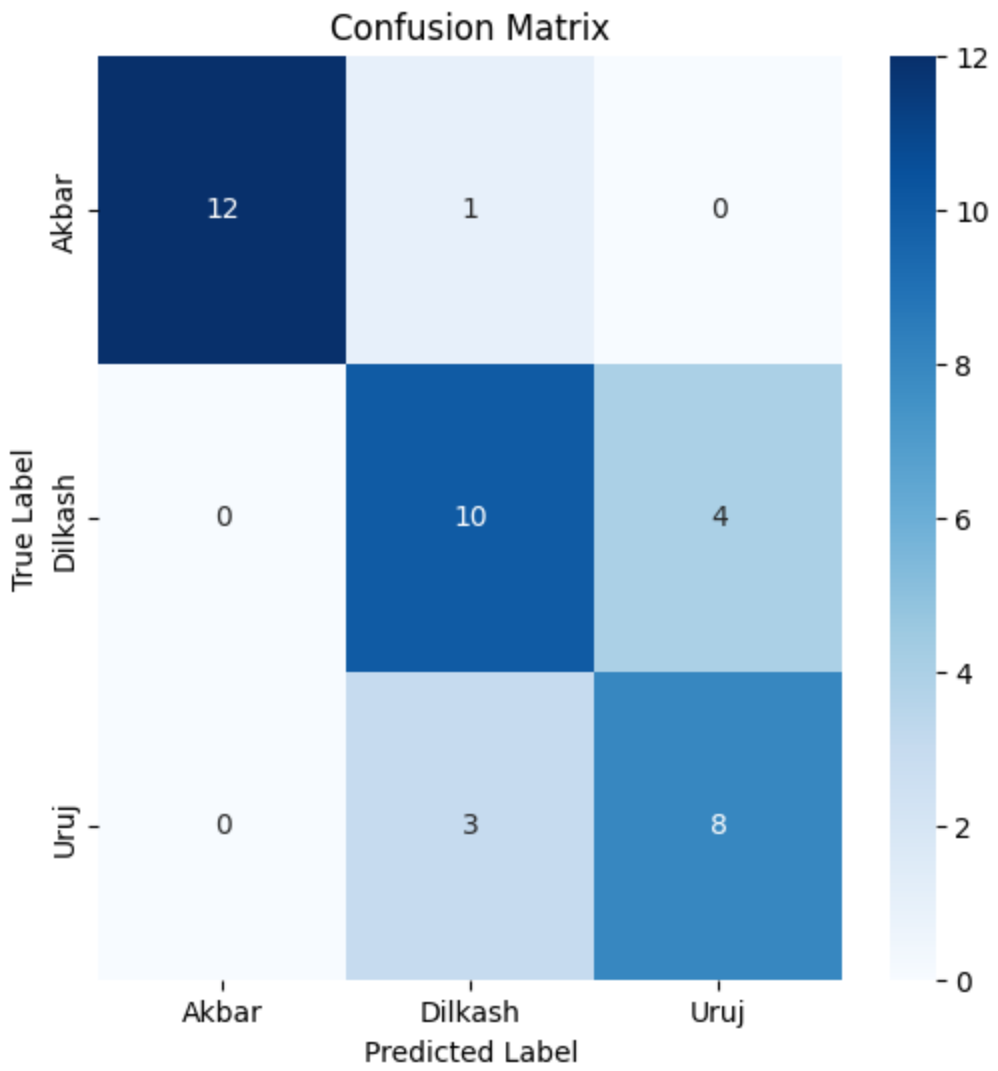
	precision	recall	f1-score	support

Akbar	1.00	0.92	0.96	13
Dilkash	0.71	0.71	0.71	14
Uruj	0.67	0.73	0.70	11

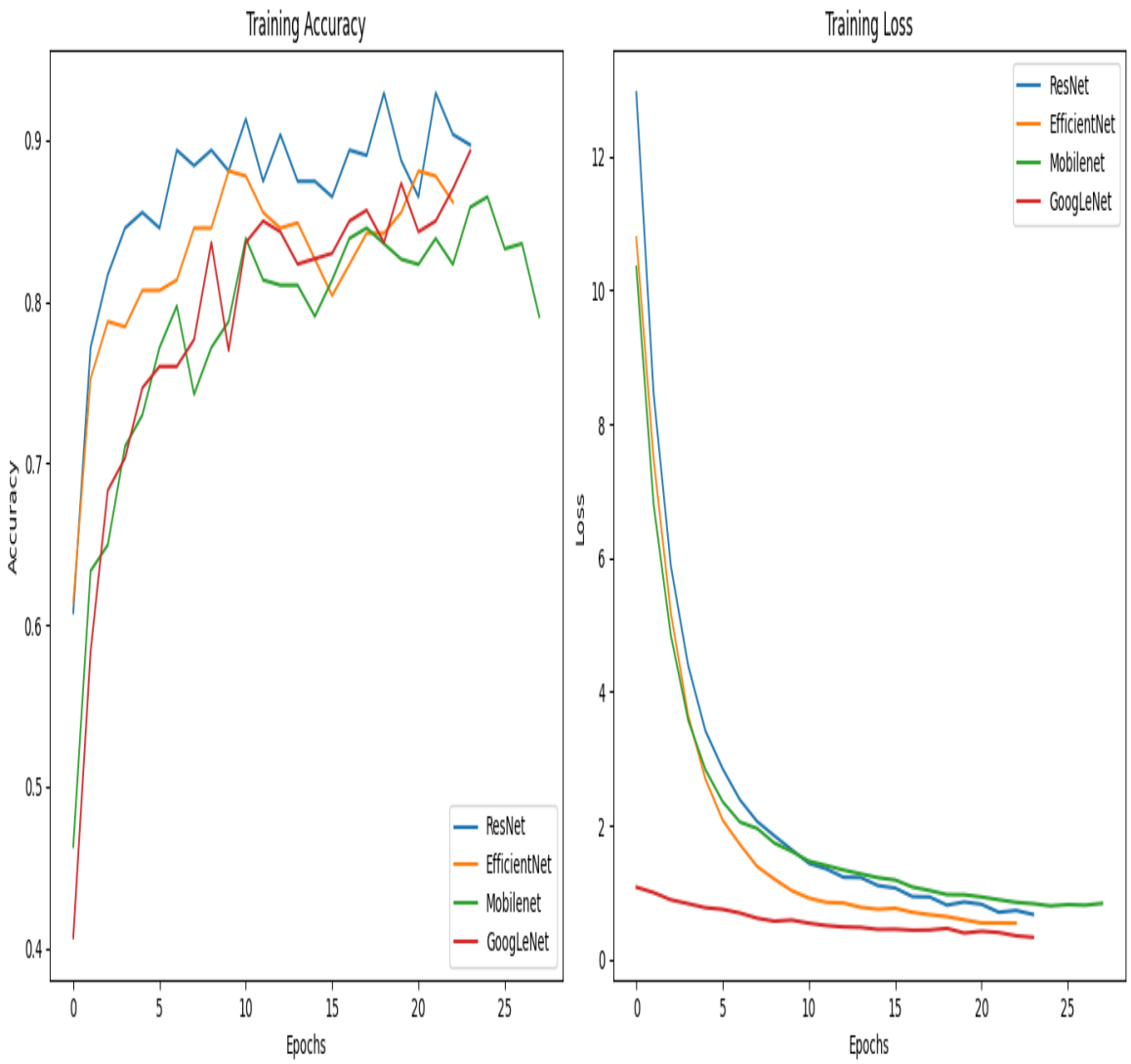
Trainning and Validation Accuracy:



Confusion Matrix:



Model Comparison:



This graph shows ResNet achieves the highest training accuracy but shows signs of overfitting with higher loss. GoogleNet maintains low, stable loss with good accuracy, making it the most balanced and reliable model overall.

Test, Train (80,20):

Accuracy: 0.9219

Precision: 0.9281

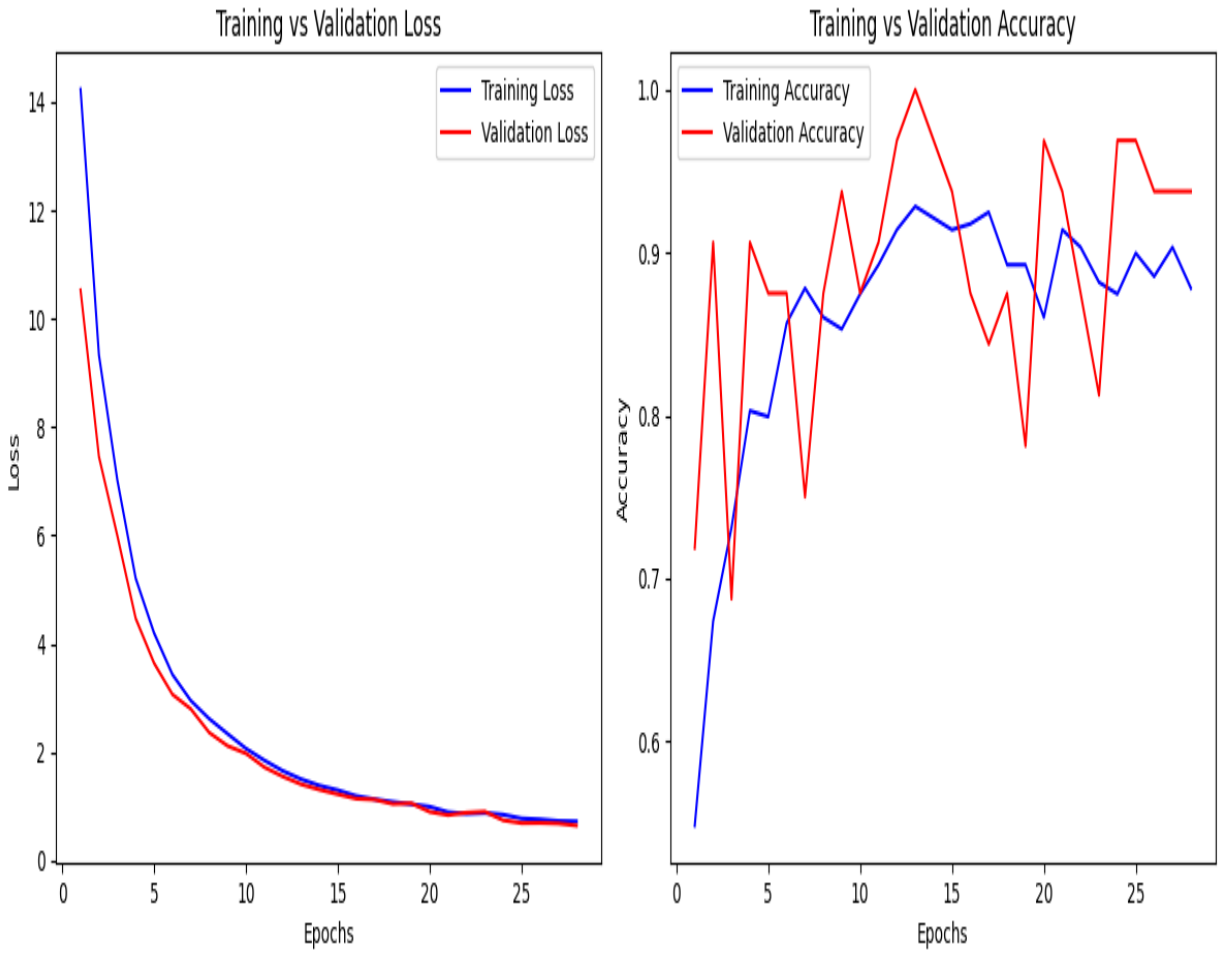
Recall: 0.9219

F1-Score: 0.9220

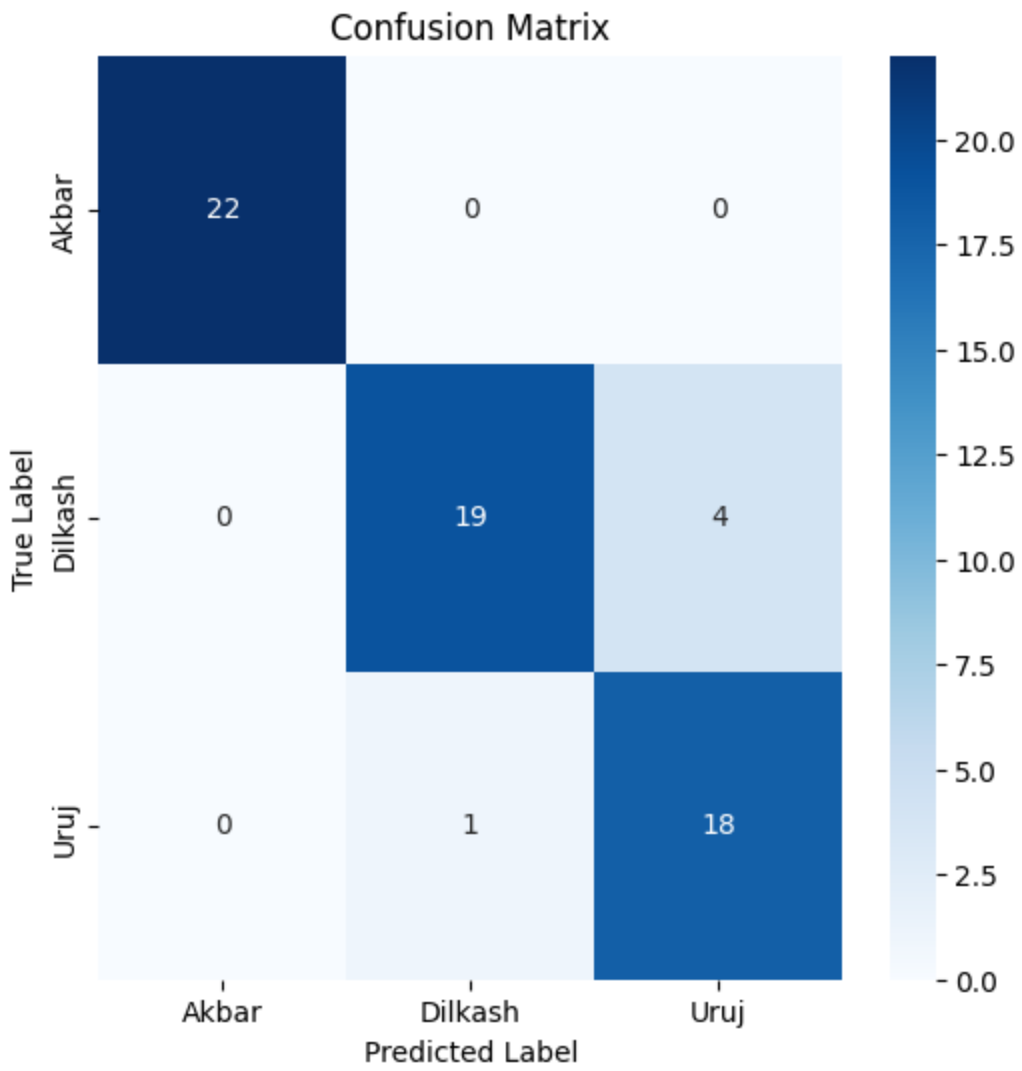
Classification Report:

	precision	recall	f1-score	support
Akbar	1.00	1.00	1.00	22
Dilkash	0.95	0.83	0.88	23
Uruj	0.82	0.95	0.88	19

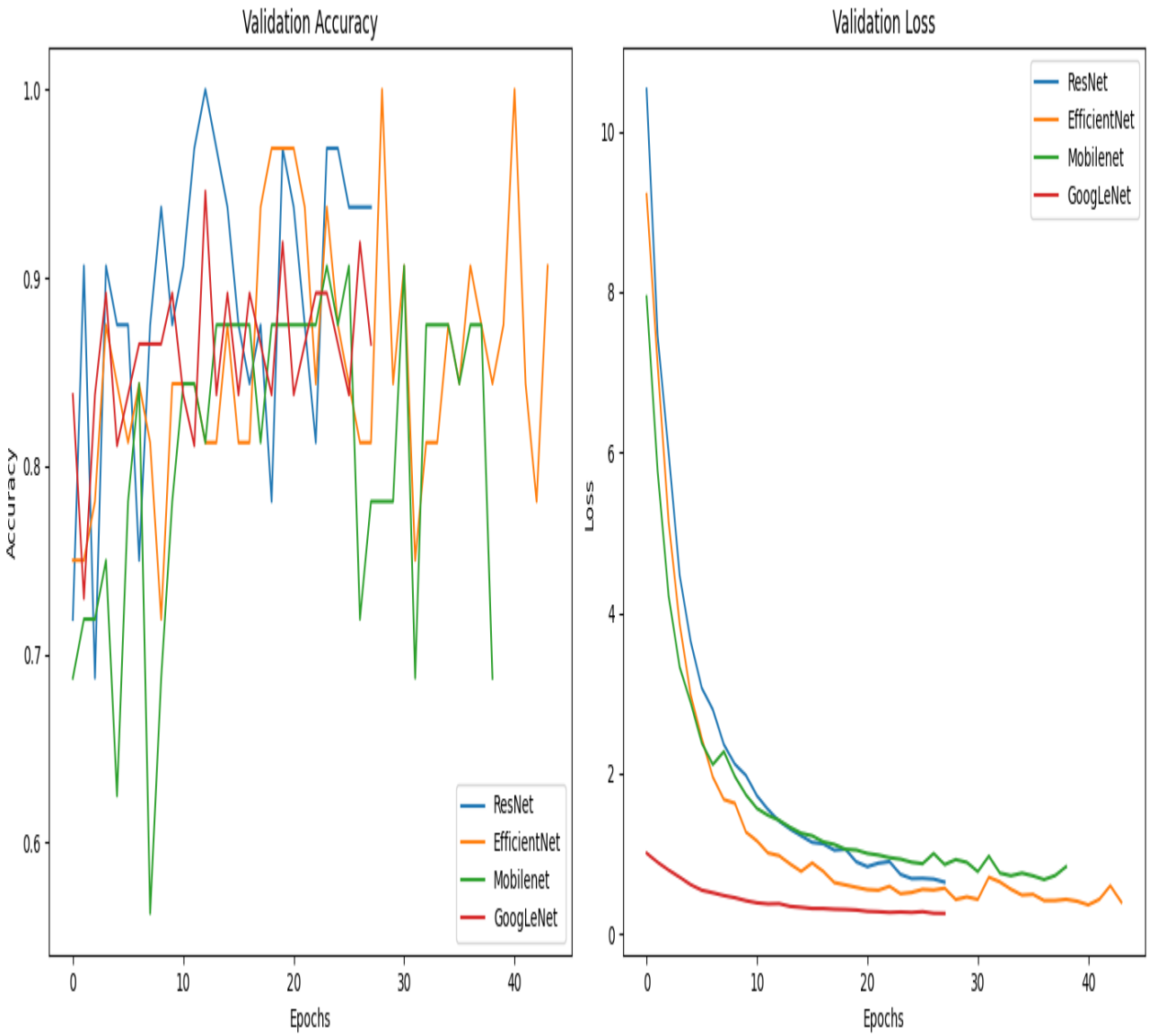
Trainning and Validation Accuracy:

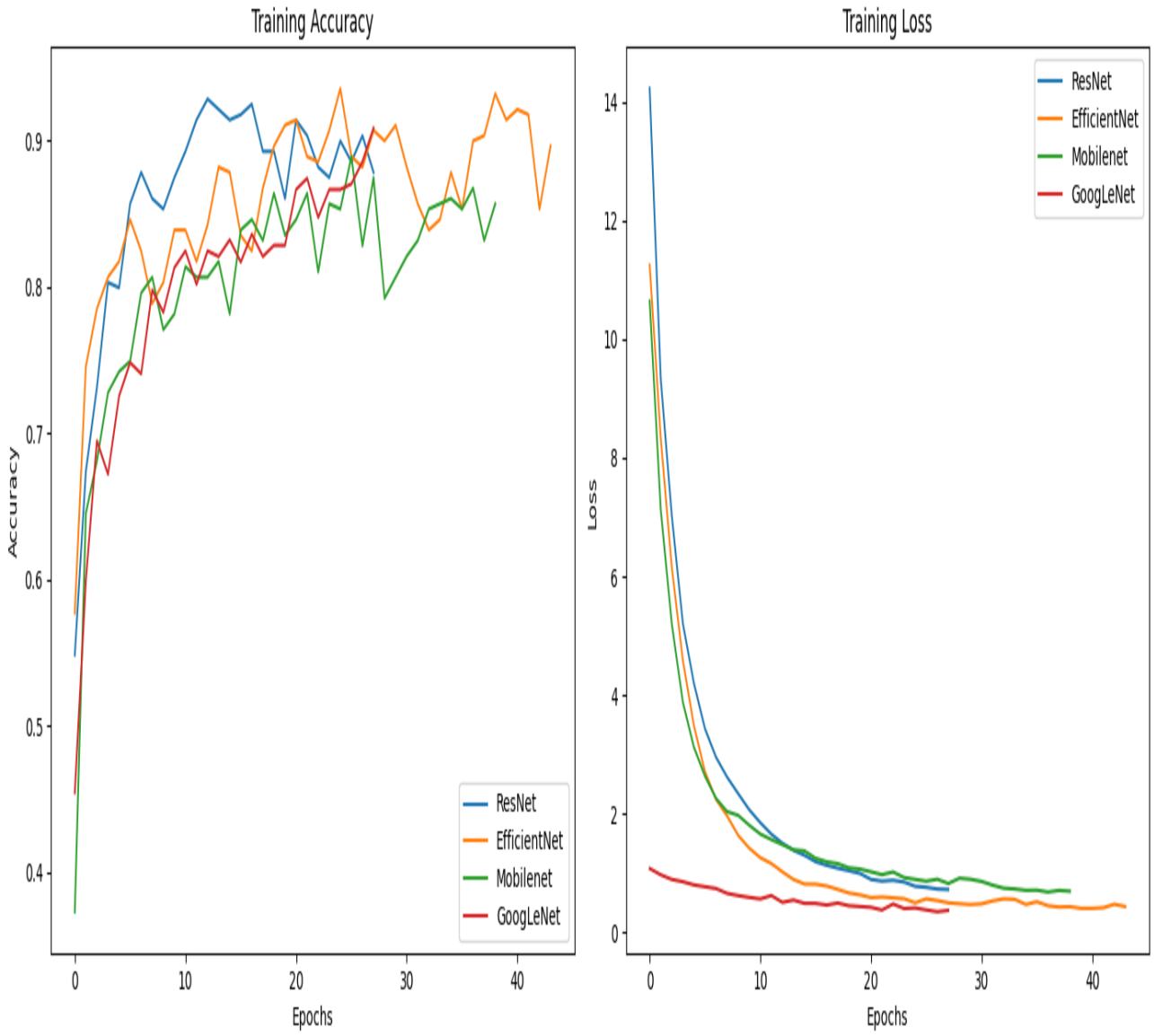


Confusion Matrix:



Using Resnet,EfficientNet,Mobilenet,GoggLeNet:


Validation Accuracy
Accuracy
Epochs
ResNet
EfficientNet
Mobilenet
GoogLeNet
Validation Loss
Loss
Epochs
ResNet
EfficientNet
Mobilenet
GoogLeNet



Train, Test (70,30):

Accuracy: 0.9375

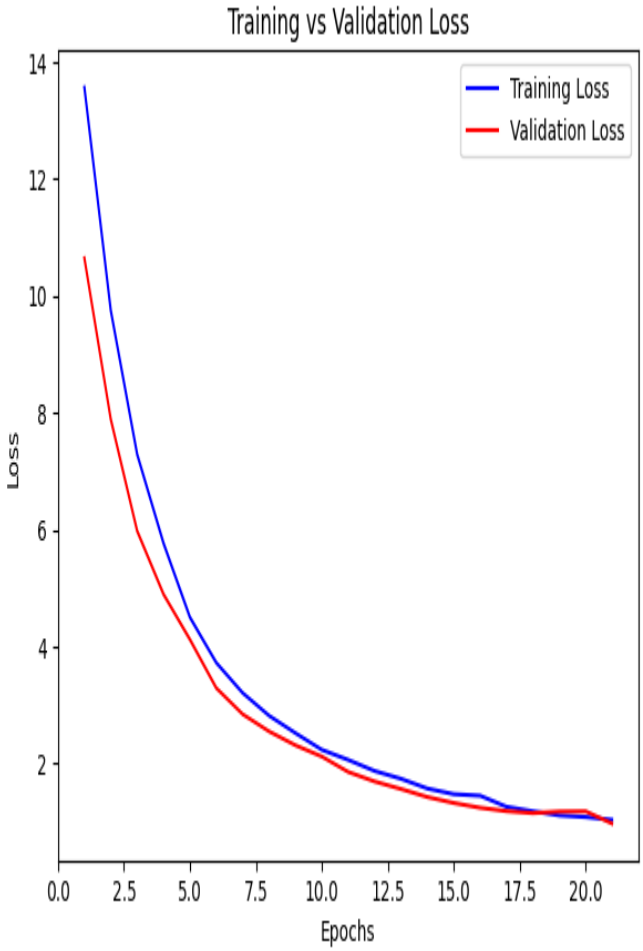
Precision: 0.9471

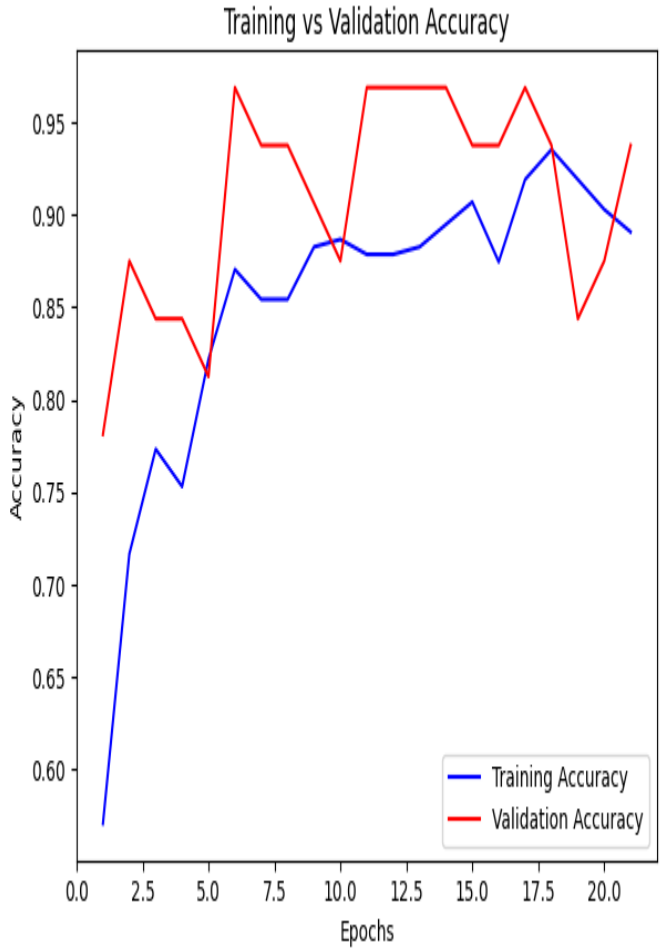
Recall: 0.9375

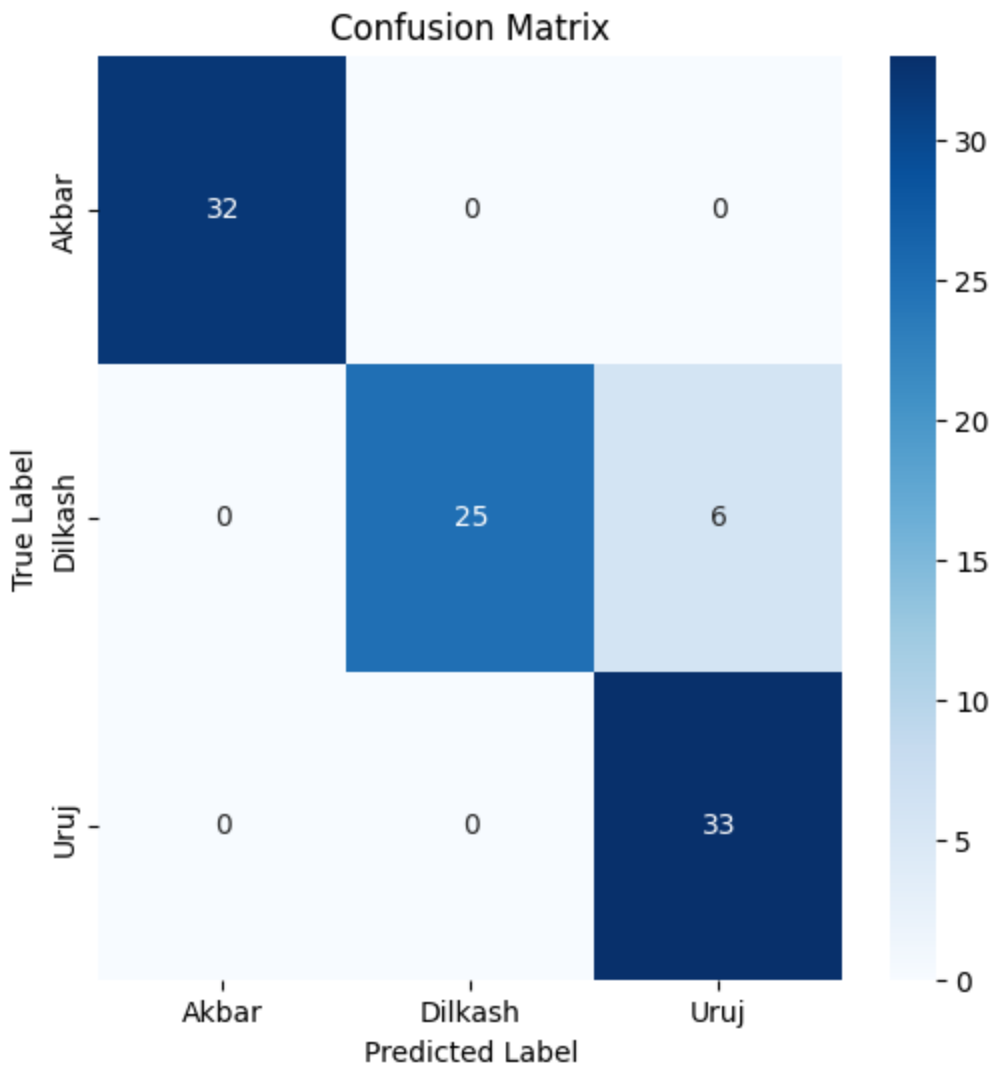
F1-Score: 0.9368

Classification Report:

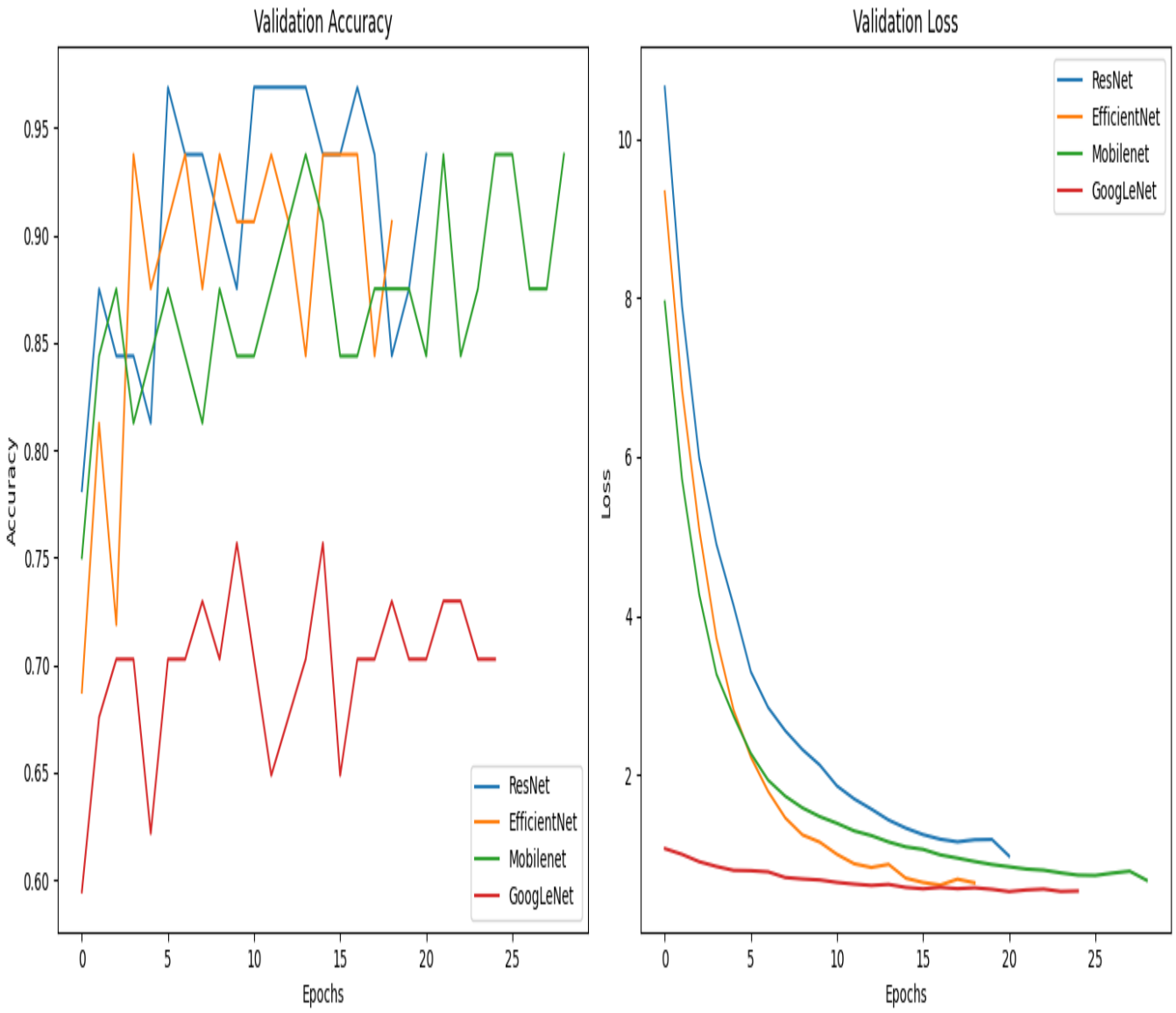
	precision	recall	f1-score	support
Akbar	1.00	1.00	1.00	32
Dilkash	1.00	0.81	0.89	31
Uruj	0.85	1.00	0.92	33

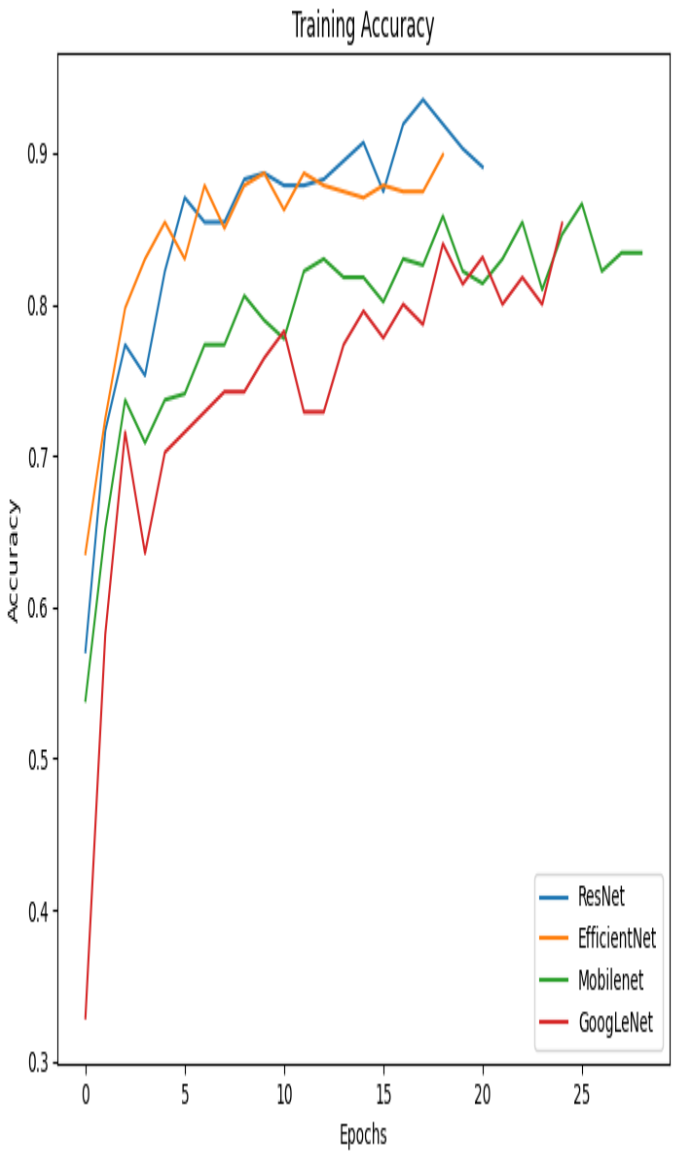


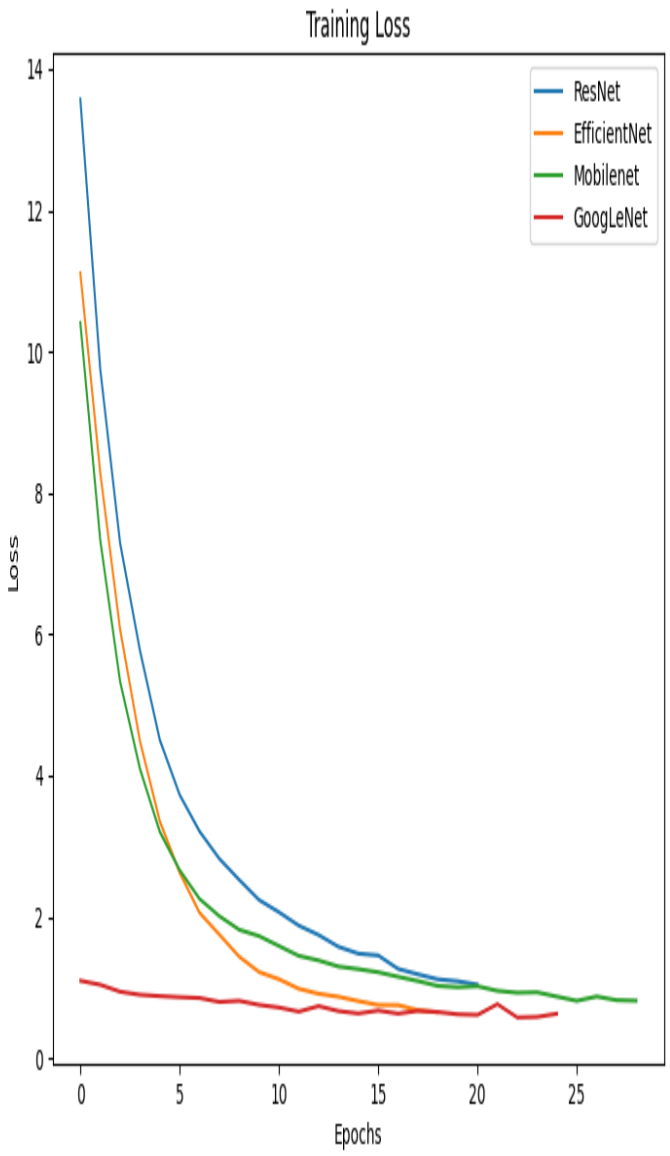




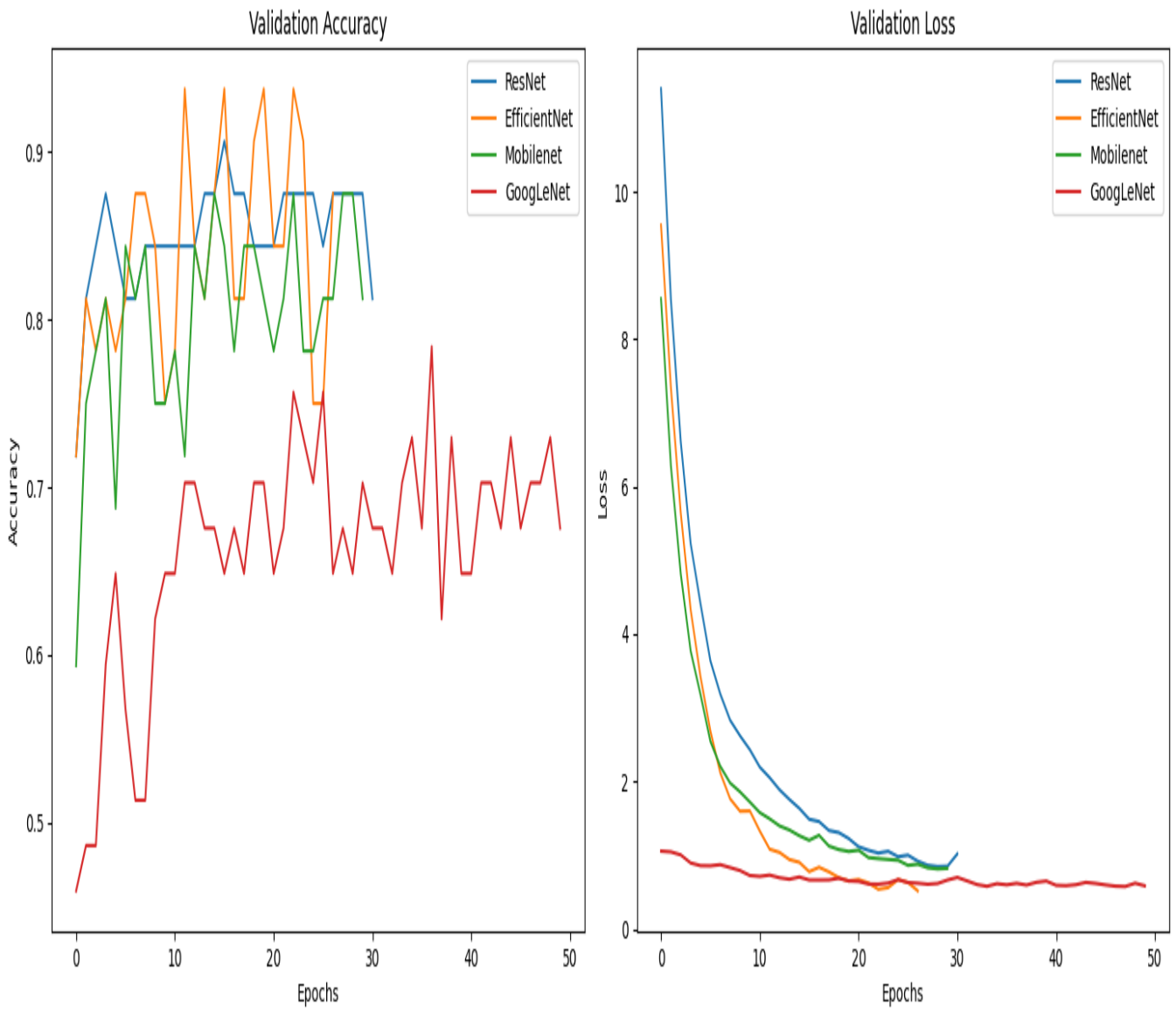
Using Resnet,EfficientNet,Mobilenet,GoggLeNet:

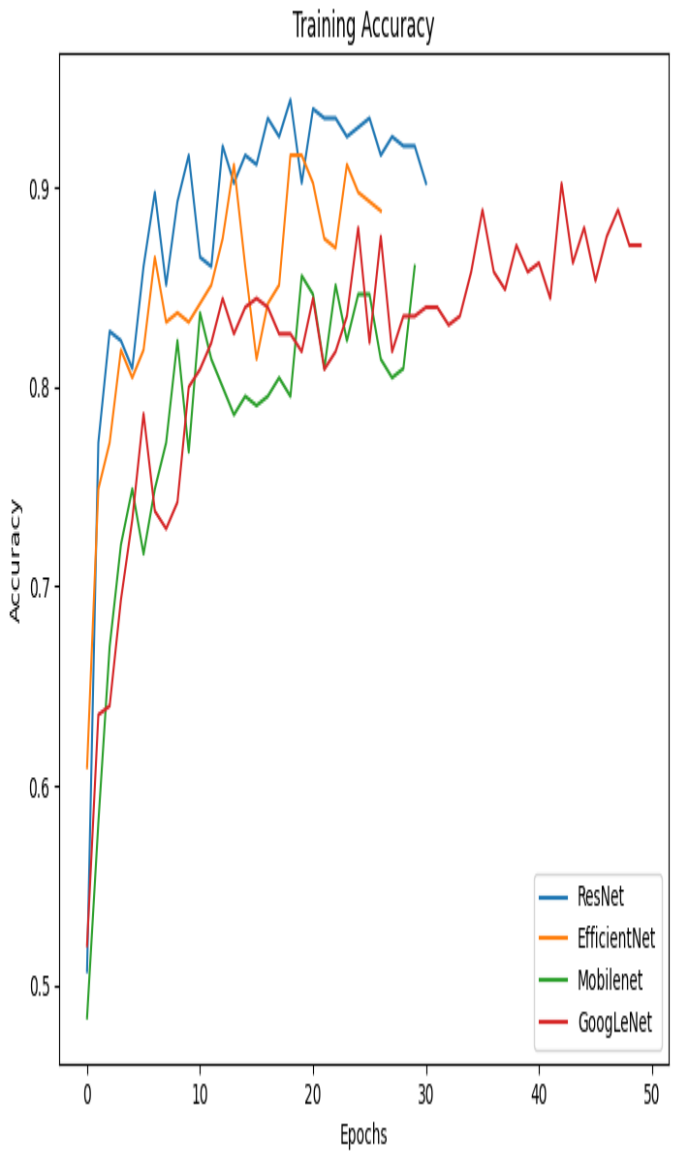

Validation Accuracy
Accuracy
Epochs
ResNet
EfficientNet
Mobilenet
GoogLeNet
Validation Loss
Loss
Epochs
ResNet
EfficientNet
Mobilenet
GoogLeNet

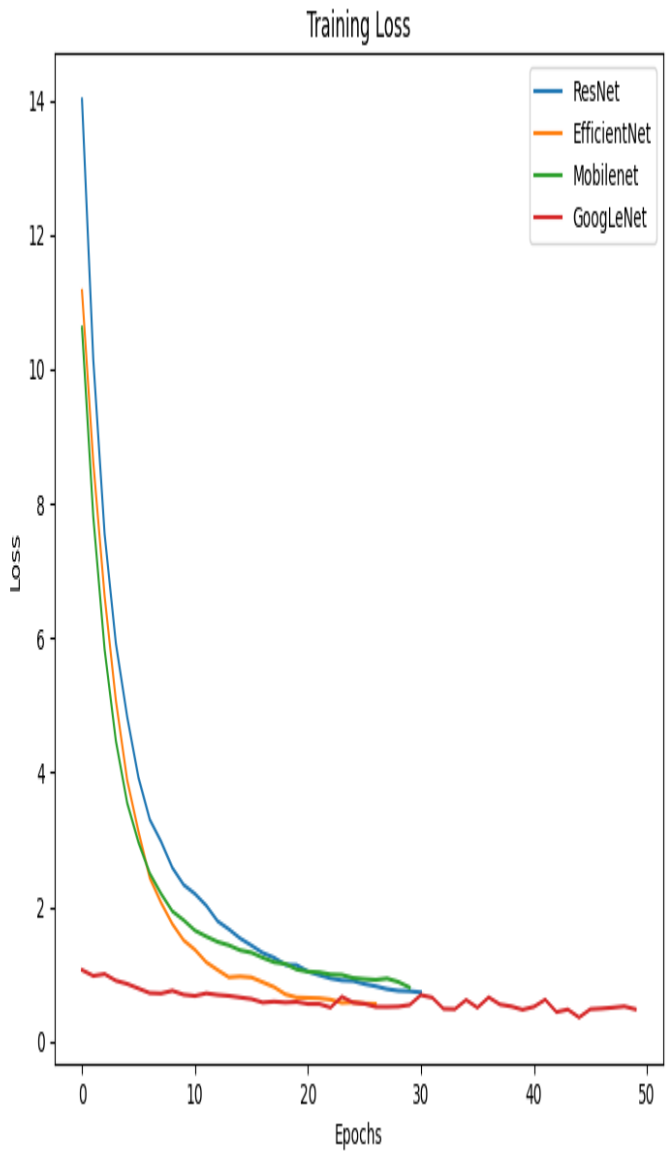




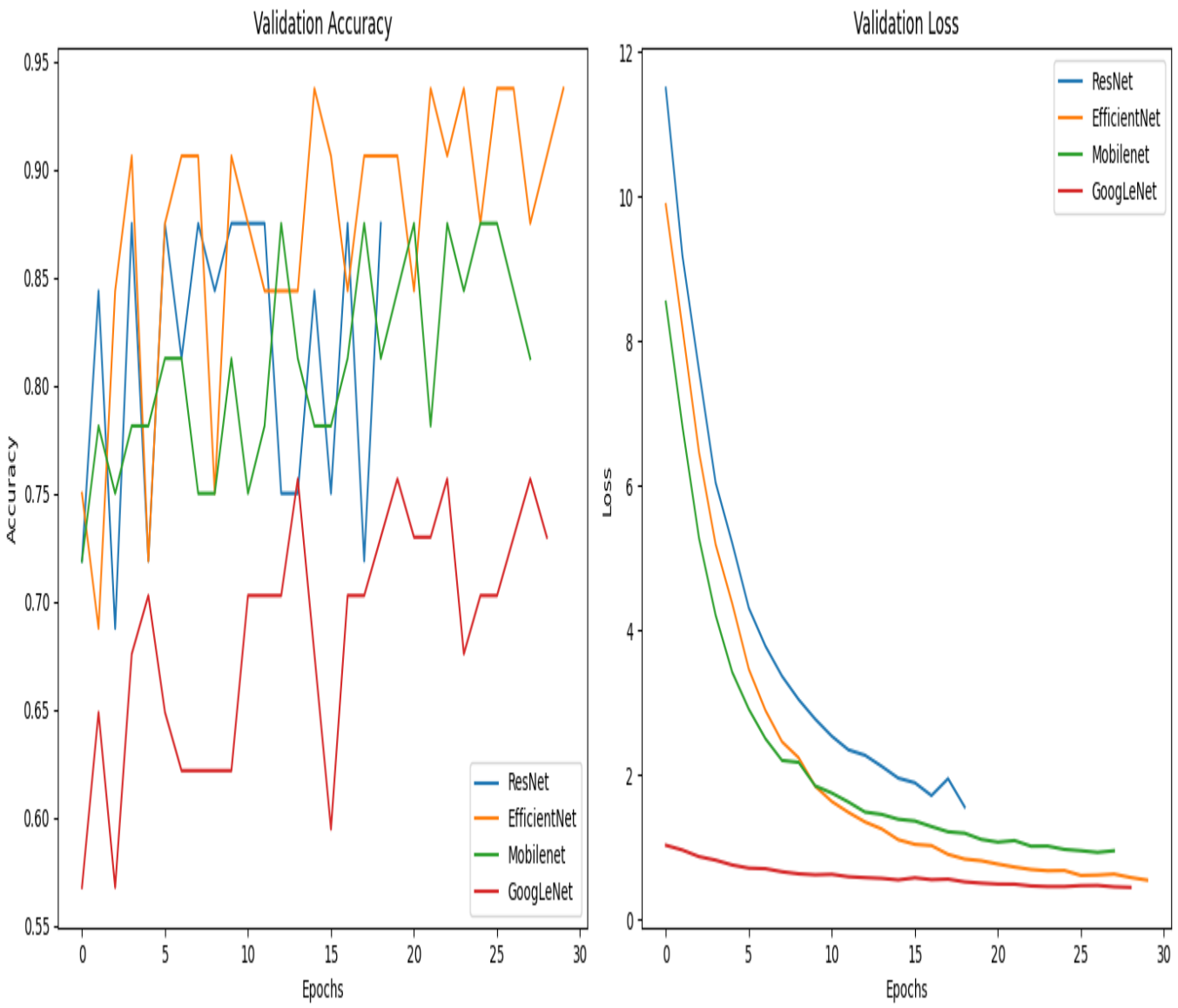
Train, Test (60,40):

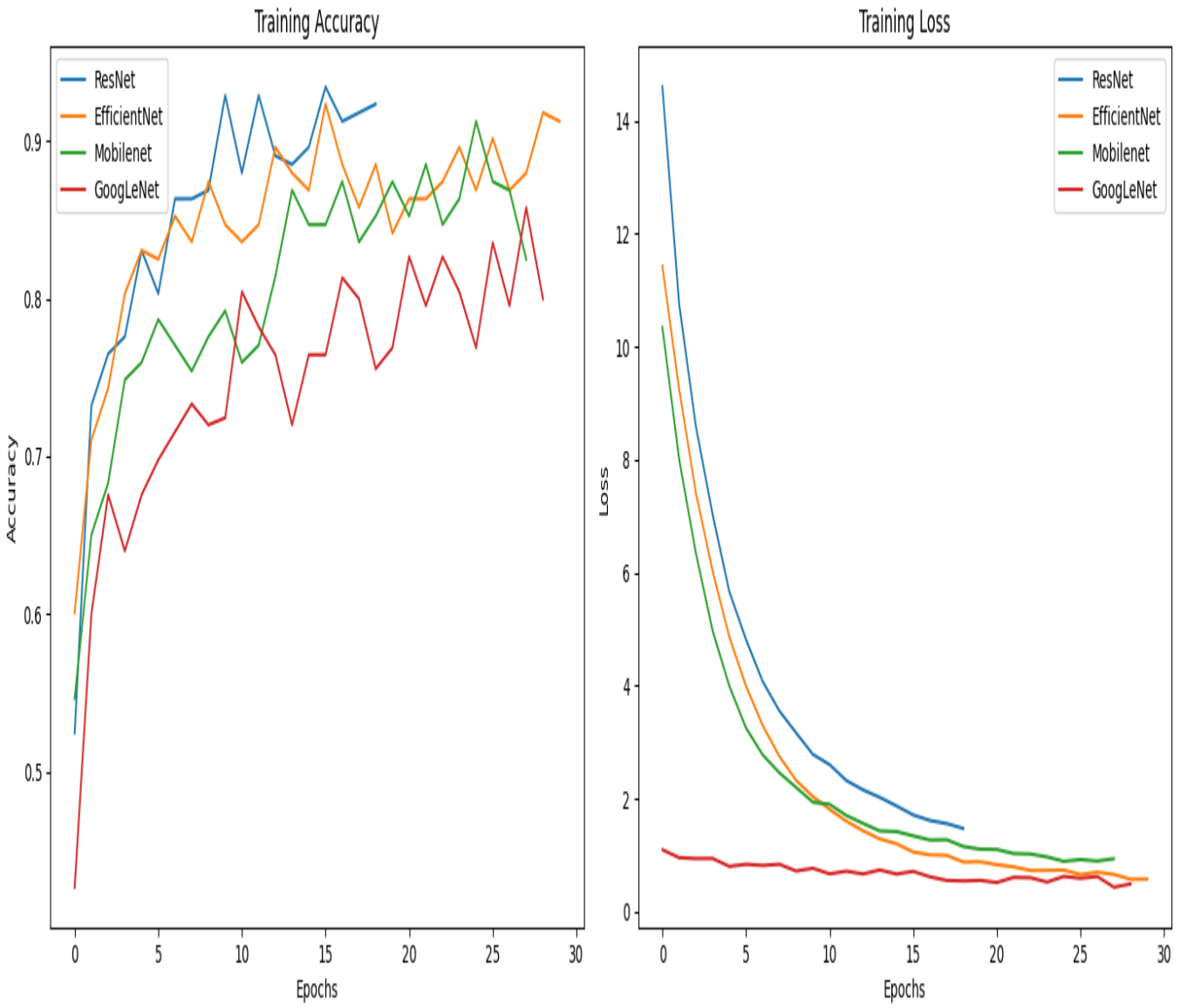

Validation Accuracy
ResNet
EfficientNet
Mobilenet
GoogLeNet
Accuracy
Epochs
Validation Loss
ResNet
EfficientNet
Mobilenet
GoogLeNet
Loss
Epochs





Train, Test (50,50):


Validation Accuracy
Accuracy
Epochs
ResNet
EfficientNet
Mobilenet
GoogLeNet
Validation Loss
Loss
Epochs
ResNet
EfficientNet
Mobilenet
GoogLeNet


Training Accuracy
ResNet
EfficientNet
Mobilenet
GoogLeNet
Accuracy
Epochs
Training Loss
ResNet
EfficientNet
Mobilenet
GoogLeNet
Loss
Epochs